

Correspondence

The Editorial Board will be pleased to receive and consider for publication correspondence containing information of interest to physicians or commenting on issues of the day. Letters ordinarily should not exceed 600 words, and must be typewritten, double-spaced, and submitted in duplicate (the original typescript and one copy). Authors will be given an opportunity to review any substantial editing or abridgement before publication.

Preventing Osteoporosis

TO THE EDITOR: Dr Bruce Ettinger's article, "A Practical Guide to Preventing Osteoporosis," in the December 1988 issue,¹ brings out a number of interesting factors related to osteoporosis, but it also omits several.

I liked the analogy of the "bone bank account." Most "deposits" are made in adolescence and most "withdrawals" are made in the several years after menopause. It is my understanding that bone physiology is a dynamic process that continues throughout life, with a constant laying down of new bone and absorption of old bone. It would seem that absorption outstrips deposition in the later years of life. It is important that the bone bank deposit accounts be emphasized in the earlier years of life when one is in the building process.

Of the many different factors that influence calcium loss, Dr Ettinger makes no mention of some that may be of vital importance: high protein intake, caffeine, and carbonated beverages. He did mention that smoking reduces estrogen levels and that alcohol not only has a direct toxic effect on bone but is often associated with poor dietary habits, as well as decreased calcium absorption from the gut. Numerous studies have shown that high protein intake favors calcium loss in the urine. It is well documented that animal proteins are much more effective in promoting calcium loss in the urine than are proteins of vegetable origin. This appears to be because of the increased number of amino acids in animal proteins containing sulphur. The sulphur, apparently in its metabolic activity, changes the pH of the urine, favoring calcium loss. In addition, others have shown that high intake of caffeine increases urinary calcium loss. If we read the label on most carbonated beverages, we notice that one of the ingredients is phosphoric acid. High phosphate intake also is known to increase urinary calcium loss. Meat also has a high phosphorus content, and this may be one of the other factors, in addition to the high protein content, that favors excessive calcium loss in those with high meat intake. Some studies have shown that even men with very high protein intake cannot take enough calcium to put them in positive calcium balance.

It is quite well documented that most Americans ingest far more protein than they need. Protein intake in this country is particularly high in both meat and dairy products. It would seem to me that a practical program for the prevention of osteoporosis should begin in childhood by encouraging children to eat a diet that is adequate in protein, to minimize the intake of caffeinated and carbonated beverages, and to promote healthy exercise to stress the bones, which will encourage good mineral deposition. The diets that are advocated by both the American Cancer Society and the American Heart Association would have adequate protein and be low in total fat, particularly saturated fat and cholesterol, and high in fiber and vitamin and mineral content. The adoption of the life-style and eating habits promoted by the

American Cancer Society and the American Heart Association would not only reduce the risk for cancer and cardiovascular disease but also for osteoporosis, diabetes, gallbladder disease, obesity, diverticulosis, diverticulitis, and a whole host of other disease entities.

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REFERENCE

1. Ettinger B: A practical guide to preventing osteoporosis. *In* Women and Medicine (Special Issue). West J Med 1988; 149:691-695

Public Health Notes

TO THE EDITOR: Here are two public health concerns that we wish to bring to the attention of your readers.

Radon Testing of California Homes

In September 1988, the US Environmental Protection Agency (EPA) recommended that all homes in the nation be tested for the presence of radon. This recommendation was based on the recognized potential of radon to cause lung cancer and limited data from a survey of homes in 17 states showing elevated levels of radon in a significant number of homes in some of the states. California was not among the test states. Since the EPA's announcement, public interest in radon testing has increased notably, and we have received numerous queries from physicians requesting information on how they should advise patients.

Neither the California Department of Health Services (CDHS) nor the California Conference of Directors of Environmental Health currently recommend, as a matter of public policy, that all California homes be tested for radon. The generally mild climate, presence of predominantly low uranium content soils, and prevailing methods of home construction all militate against radon being a substantial problem in California. Likewise, specific sampling data from various parts of the state have found very few homes with elevated levels of radon. Indeed, to date, the study showing the greatest number of homes with elevated levels of radon was a survey conducted by the *Los Angeles Times*, with technical assistance from the CDHS and others, of 436 homes in Los Angeles, Riverside, Orange, San Bernardino, and Ventura counties that found 1.2% of test homes to have indoor air radon concentrations in excess of the EPA's action level of 4 pCi per liter. The overwhelming majority of homes having elevated radon levels were only mildly above the action level.

While the CDHS is currently conducting both statewide and geographically targeted testing of homes for radon contamination, we do not think that there is any reason for across-the-board testing. We do not discourage persons from having their homes tested for radon, however. If this is done,